A Tour Around the Showroom: Taking a Spin with New HMT-WPC Developments

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ABSTRACT

The implementation of research-to-operations (R2O) is a vital component in the advancement of weather prediction. Therefore, as the center responsible for providing the nation's quantitative precipitation (QPF) and winter weather forecasts, the Weather Prediction Center's (WPC) ability to implement a successful research-to-operations process is critical. The main responsibility for this process is given to the WPC's Hydrometeorological Testbed (HMT-WPC), which has developed a methodology for evaluating new developments and implementing them into WPC operations.

This presentation will focus on recent products that are emerging from the R2O process at HMT-WPC, with a goal toward advancing and enhancing WPC's product suite. The first is the development of a probabilistic Day 4-7 winter weather guidance product, which was evaluated during the 2014 and 2015 Winter Weather Experiments and prototyped operationally at WPC during the 2014-2015 winter season. The second focuses on efforts to advance flash flood forecasting, which include the creation and evaluation of probabilistic flash flood guidance and the construction of a real-time flash flood database. This new database collects point observations (LSRs, mPING) of flash flooding, and uses USGS streamflow data to identify areas where stream and rivers exceed their 2 year recurrence interval or defined flood stage, to identify areas that received flash flooding. These probabilistic flash flood guidance products and the flash flood database were featured in the 2014 Flash Flood and Intense Rainfall Experiment, and will play a pivotal role in the effort to improve flash flood prediction and verification nationwide.

The evaluation process and subsequent lessons learned from each product's evaluation and implementation will be highlighted, and future plans for the Day 4-7 winter weather probabilities, flash flood probabilistic guidance and the flash flood observational database will be discussed.